

Statistical Sciences (D-1)
Self-Assessment Appendix
January 2004 — January 2005

1. List of books and publications in peer-reviewed journals; most significant publications are denoted by an *.

D.B. Adams, L.T. Watson, Z. Gurdal, C.M. Anderson-Cook, "Genetic algorithm optimization and blending of composite laminates by locally reducing laminate thickness." *Advances in Engineering Software*, **35**, 35-43 (2004).

C.M. Anderson-Cook, H. Goldfarb, C. Borrer, D.C. Montgomery, K.G. Canter, and J.A. Twist, "Mixture and Mixture-Process Variables Experiments for Pharmaceutical Applications," *Pharmaceutical Statistics*, **3**, 247-260 (2004).

C.M. Anderson-Cook, and A. Ozol-Godfrey, "Using Fraction of Design Space Plots for Informative Comparisons between Designs," (book chapter), *Modern Advances in Response Surface Methodology*, Editor: Andre Khuri, to appear (2004).

C.M. Anderson-Cook, A. Patterson, R. Hoerl, "A Structured Problem Solving Course for Graduate Students: Exposing Students to Six Sigma as Part of their University Training," *Quality and Reliability Engineering International*, to appear (2004).

J. Biggs, S. Sherwood, S. Michalak, L. Hansen, and C. Bare, "Animal-Related Vehicle Accidents at the Los Alamos National Laboratory, New Mexico," *The Southwestern Naturalist*, **49** (3):384-394 (2004).

T. Burr, and J. Gattiker, "The Impact of Model Uncertainty on Biological Parameter Estimates," *Far East Journal of Theoretical Statistics*, 13(2), 153-174 (2004).

T.L. Burr, A. Jacobson, A. Mielke, "A Global Radio Frequency Noise Survey as Observed from the FORTE Satellite at 800-km Altitude," *Radio Science* 39, RS 4005, doi:10.1029/2002RS002865 (2004).

T.L. Burr, M. Krick, M., A. Mielke, "Statistical Evaluation of Two Triggering Systems: an Application of Conditional Variance," *Nuclear Inst and Methods in Physics Research A* 524, 314-322 (2004).

G. Chowell, N. Hengartner, P. Femimore, and C. Castillo-Chavez, "Ebola hemorrhagic fever: Epidemic modeling and Estimation," to appear in *Journal of Theoretical Biology*.

W.J. Crooks III, D.R. Spearing, J.A. Rennie, L.A. Worl, and T. L. Burr, "For the Storage of Plutonium Metal, is a Surveillance Program for Pressurization Necessary?" to appear *Journal Nuclear Material Management* (2004).

J. Doak, T.L. Burr, D. Moore, J. Schaefer, "Modeling of a Fuel Fabrication Facility using Python and SimPy," Proc Pycon 2004 Washington DC (2004).

- D. Drain, W.M. Carlyle, D.C. Montgomery, C.M. Borror, C.M. Anderson-Cook, "A Genetic Algorithm Hybrid for Constructing Optimal Response Surface Designs," *Quality and Reliability Engineering International*, **20**, 637-650 (2004).
- D.W. Forslund, E. L. Joyce, T.L. Burr, R. Picard, D. Woukun, E. Umland, J.C. Brillman, P. Froman, and F. Koster, "Setting Standards for Improved Syndromic Surveillance," *IEEE Engineering in Medicine and Biology*, 23 65-70 January/February (2004).
- H.B. Goldfarb, C.M. Borror, D.C. Montgomery, C.M. Anderson-Cook, "Evaluation of Statistical Designs for Mixture-Process Variable Experiments with Noise Variables," *Journal of Quality Technology*, **36**, 245-262 (2004).
- H.B. Goldfarb, C.M. Borror, D.C. Montgomery, C.M. Anderson-Cook, "Statistical Designs for Mixture-Process Variable Experiments with Control and Noise Variables," *Journal of Quality Technology*, to appear (2004).
- T.L. Graves and M.S. Hamada, "Biased Reduced Sampling: Detectability of an Attribute and Estimation of Prevalance," to appear in *Quality and Reliability Engineering International* (2004).
- M. S. Hamada, H.F. Martz and S. Steiner, "Accounting for Mixing Errors in Analyzing Mixture Experiments," accepted for publication in *Journal of Quality Technology* (2005).
- M. S. Hamada, H.F. Martz, C.S. Reese, T. Graves, V. Johnson , and A.G. Wilson, "A Fully Bayesian Approach for Combining Multilevel Failure Information in Fault Tree Quantification and Optimal Follow-on Resource Allocation," *Reliability Engineering and System Safety*, **86 (3)**, 297-305 (2004).
- M.S. Hamada, V. Johnson, L.M. Moore and J. R. Wendelberger, "Bayesian Prediction Intervals and their Relationship with Tolerance Intervals," *Technometrics*, **46**, 452-459 (2004).
- M.S. Hamada and R. Sitter, "Statistical Research: Some Advice to Beginners," *The American Statistician*, **58**, 93-101. Discussion and response, **58** 196-202 (2004).
- N. Hengartner, and S. Sperlich, "Rate Optimal Estimation with the Integration Method in Presence of Many Covariates," to appear in the *Journal of Multivariate Analysis* (2004).
- N. Hengartner, and M. Wegkamp, "Second Order Asymptotics for Z estimators," In book *The first Erich Lehmann Symposium – Optimality* Pages 107-124 (2004).
- D.M. Higdon, "Discussion of: Nonstationary Multivariate Process Modeling through Spatially Varying Coregionalization," *Test*, **13**, 298-303 (2004).
- K.K. Hill, L. O. Ticknor, R.T. Okinaka, M. Asay, H. Blair, K.A. Bliss, M. Laker, P.E. Pardington, A. P. Richardson, M. Tonks, D.J. Beecher, J.J. Kemp, A.-B. Kolsto, A.C. Lee Wong, P. Keim, P.J. Jackson, "Fluorescent Amplified Fragment Length Polymorphism Analysis of *Bacillus anthracis*, *Bacillus cereus*, and *Bacillus thuringiensis* Isolates. Applied and Env. Microbiology **70**:1068-1080 (2004).
- J. Jacobson, N. Hengartner, and T. Louis, "Measures of Inequitable Proximity to Major Highways in NYC," to appear in *Environment and Planning Analysis*.

H. Lee, D.M. Higdon, K. Calder, and C. Holloman, "Spatial Models via Convolutions of Intrinsic Processes," *Statistical Modelling*, to appear.

H. Lee, B. Sanso, W. Zhou, W and D.M. Higdon, "Inferring Particle Distribution in a Proton Accelerator Experiment," *Bayesian Analysis*, to appear.

S.E. Michalak, K. Harris, N. Hengartner, B. Takala, and S. Wender, "Predicting the Number of Fatal Soft Errors in Los Alamos National Laboratory's ASC Q Supercomputer," to appear in the *invited IEEE Transaction on Device and Materials Reliability* Special Issue on Soft Errors.

S. E. Michalak and G. D. Wilson, "Reconsidering Smallpox," to appear in *Chance* (2005).

M. Morris, L.M. Moore and M.D. McKay, M., "Incomplete Factorial Sampling Plans for Evaluating the Importance of Computer Models," to appear *JSPI 2005*.

C. W. Nakhleh, and D.M. Higdon, "Discussion of: When Can Finite Testing Ensure Infinite Trustworthiness?," *Journal of the Iranian Statistical Society* (2004).

A. Ozol-Godfrey, C.M. Anderson-Cook, D.C. Montgomery, "Fraction of Design Space Plots for Examining Model Robustness," *Journal of Quality Technology*, to appear (2004).

R. Picard, "Importance Sampling for Simulation of Markovian Physical Processes," *Technometrics* **47**, (to appear 2005).

C.S. Reese, A.G. Wilson, M. Hamada, H.F. Martz and K.J. Ryan, "Integrated Analysis of Computer and Physical Experiments," *Technometrics*, **46**(2), 153-164 (2004).

K.E. Sheldon, C.M. Anderson-Cook, and W.F. O'Brien, "Using Computer Modeling to Optimize Cost and Maintain Performance Constraints for Production of Aircraft Turbine Engines," *Quality and Reliability Engineering International*, **20**, 541-551.

B. H. Sims, "Safe Science: Material and Social Order in Laboratory Work," *Social Studies of Science*, to appear (2005).

M. Talih, and N. Hengartner, "Markov Field on time varying graphs," to appear in the *Journal of the Royal Statistical Society, Series B*.

A.G. Wilson, C. S. Reese, M.S. Hamada, and H.F. Martz , "Integrated Analysis of Computer and Physical Experimental Lifetime Data," Chapter 9 in *Mathematical Reliability: An Expository Perspective*, (R. Soyer, T.A. Mazzuchi, and N.D. Singpurwalla, Eds.), Kluwer Publishers, Boston, MA, 183-194 (2004).

A. Wilson, M. Hamada, and M. Xu, "A Bayesian Approach for Determining Production Performance and Release Specifications in the Presence of Measurement Error," *Journal of Quality Technology* **36**(2) 193-206 (2004).

2. List of publications in conference proceedings; most significant publications are denoted by an *.

- C.M. Anderson-Cook, L. Liang, T.J. Robinson, "Graphical Design Assessment Tools for Split-Plot Designs," Fall Technical Conference, Roanoke, VA, October 2004.
- C.M. Anderson-Cook, A. Ozol-Godfrey, R.H. Myers, "Graphical Methods for Design Assessment for Designs Involving Generalized Linear Models," Invited Talk at Joint Statistical Meetings of the American Statistical Association, Toronto, Canada, August 2004.
- D. Bingham, E. Kelly, L. M. Moore, D. Olivas, and R. Sitter, "A Grouping Scheme for Conducting Experiments in Several Stages," Spring Research Conference on Statistics in Industry and Technology, Gaithersburg, MA, May 2004.
- D. Bingham, N. Hengartner, D.M. Higdon, C. Linkletter, R. Sitter, "Comparing Designs of Experiment for Screening and Prediction in Computer Experiments," *Proceeding of the 29th Annual JANNAF conference. (2004)*.
- T. Burr, C. Boyle, M. Baker, P. Felsher, M. Frank, G. Hemphill, B. Martinze, L. Ticknor, "Tool for Inventory Difference Evaluation with Flexible Material Balance Areas," 2004 Annual Institute of Nuclear Material Management (INMM) Meeting, Orlando, Florida, July 2004.
- K. Campbell, "A Brief Survey of Statistical Model Calibration Ideas," tutorial presented at 4th International Conference on Sensitivity Analysis of Model Output (SAMO), Santa Fe, NM, March 2004.
- K. Campbell, M. McKay, and B. Williams, "Sensitivity Analysis When Model Outputs are Functions," 4th International Conference on Sensitivity Analysis of Model Output (SAMO), Santa Fe, NM, March 2004.
- T.L. Graves and M.S. Hamada, "Bayesian Methods for Assessing System Reliability: Models and Computation. Proceedings of the Fourth International Conference on Mathematical Methods in Reliability, Santa Fe, NM, June 2004.
- T.L. Graves, P. L. Speckman and D. Sun, "Intuitive, Easily Programmed Steps that Reduce MCMC Autocorrelation," Joint Statistical Meetings, Toronto, Ontario, Canada, August 2004.
- P. Heasler, T.L. Burr, B. Reid, C. Gesh, C. Bayne, "Estimation Procedures and Error Analysis for Inferring the Total Plutonium Produced by a Graphite-moderated Reactor," SAMO 2004, March 2004, Santa Fe, NM. Submitted to Reliability Engineering and System Safety.
- N. Hengartner, "Stockpile Reliability Assessment," Conference on Mathematical Methods in Reliability, Santa Fe, July 2004.
- N. Hengartner, "Bionet and the Challenges of Academic Work in Homeland Security," Conference on Statistics in Counterterrorism, New York, December 2004.
- N. Hengartner, "Stochastic Epidemic Modeling on Social Network," CNLS, December 2004.
- N. Hengartner and A. G. Wilson, "Stockpile Reliability Assessment," Proceedings of the 2004 Mathematical Methods in Reliability Conference, Santa Fe, NM, June 2004.

D.M. Higdon, "Space-time modeling," invited lecturer at *Semstat 04*, Munich German, December 2004.

D.M. Higdon, "Simulator-aided Inference for Multivariate Field Data and Simulator Output," invited speaker at *ISBA World Meeting*, Vina del Mar, Chile, May 2004.

D.M. Higdon, "Simulator-aided Inference for Multivariate Field Data and Simulator Output," *V & V Foundations '04 Workshop*, Phoenix AZ, September 2004.

D.M. Higdon, "A Framework for Uncertainty Quantification Combining Detailed Computer Simulations and Experimental Data," invited speaker at the *Workshop on Computer Model Evaluation*, Banf Canada, July 2004.

D.M. Higdon, "A Framework for Uncertainty Quantification Combining Detailed Computer Simulations and Experimental Data," NNSA, Washington DC, March 2004.

D. M. Higdon, B. J. Williams, L. M. Moore, M. McKay, and S. Keller-McNulty, "Uncertainty Quantification for Combining Experimental Data and Computer Simulations," *Proceedings of the Foundations '04: A Workshop for VV&A in the 21st Century*. Taken from the keynote lecture by S. Keller-McNulty at the Foundations '04 Workshop, Tempe, Arizona. Deleted: ,

D.M. Higdon, B. Williams, and L.M. Moore, "Calibration and Uncertainty Quantification Using Multivariate Simulator Output," ISBA 2004 World Meeting, Vina del Mar, Spain, May 2004.

P.J. Jackson, K.K. Hill, C.H. Helma, L.O. Ticknor, and R.T. Okinaka, "Phylogenetic Analyses of *B. Anthracis* and its Close Relatives – Similarities and Differences," *Bacterial Spores: Challenges and Future Directions for Biodefense*, Argonne National Laboratory, Argonne IL, November 2004.

S. Keller-McNulty, and A.G. Wilson, A. G., "Reliability for the 21st Century," *Mathematical and Statistical Methods in Reliability*, editors Lindqvist and Doksum, World Scientific Publisher. Taken from the keynote lecture by S. Keller-McNulty for the Third International Conference on Mathematical Methods in Reliability, Trondheim, Norway.

A. Koehler, B. Sims, R. Klamann, "GROMIT: A Tool for System Behavioral Modeling," *Annual Meeting of the Society for Social Studies of Science*, Paris, France, August 2004.

K. Lao, J. Bremser, M. Koby, J. Guzik, and J.R. Wendelberger, "The Development of New LiH and Lid Material Specifications," Los Alamos National Laboratory, JOWOG 28, Y12 National Security Complex, Oak Ridge, Tennessee, June 2004.

T.K. Li, S.Y. Lee, K.E. Thomas, T.L. Burr, and H.O. Menlove, Los Alamos National Laboratory and H.D. Kim, W.I. Ko, S.W. Park, and H.S. Park, "Korea Atomic Energy Research Institute Safeguardability of Advance Spent Fuel Conditioning Process," presented at *INMM*, July 2004.

L. Liang, C.M. Anderson-Cook, T.J. Robinson, "Three-Dimensional Variance Dispersion Graphs for Designs with Split-Plot Structure," Contributed Talk at *Joint Statistical Meetings of the American Statistical Association*, Toronto, Canada, August 2004.

M.D. McKay, "Introduction to Statistical Methods for Understanding Prediction Uncertainty in Simulation Models," *6th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Operations and Safety*, Nara, Japan, October 2004.

L.M. Moore, M.D. McKay and K. Campbell, "Combined Array Experiment Design," poster at 4th International Conference on Sensitivity Analysis of Model Output (SAMO), Santa Fe, NM, March 2004.

M. Morris, L.M. Moore, and M. McKay, "Input Uncertainty and Potential-to-Validate: Sampling Plans for Monte Carlo Assessment," *Foundations '04: A Workshop for VV&A in the 21st Century*, Phoenix, AZ, October 2004.

S.E. Michalak, K. Harris, N. Hengartner, B. Takala, and S. Wender, "Using the LANSCE Irradiation Facility to Predict the Weekly Number of Soft Errors in One of the World's Fastest Supercomputers," *Proceedings of the 18th International Conference on Applications of Accelerators in Research and Industry*, October 2004.

S.E. Michalak, N. Hengartner, B. Takala, and S. Wender, "Accelerated Testing Methodology for Predicting Cosmic Ray Neutron-Induced Soft Errors," *Joint Statistical Meetings*, August 2004.

L.M. Moore and J.R. Wendelberger, "Experiment Planning for a Materials Compatibility Study," invited presentation by L. Moore, 4th International Conference on Mathematical Methods in Reliability, Santa Fe, New Mexico, June 2004.

A. Ozol-Godfrey, C.M. Anderson-Cook, and E.L. Boone, "Assessing Designs for Mixture Experiments for the Generalized Linear Model Case," Contributed Talk at *Joint Statistical Meetings of the American Statistical Association*, Toronto, Canada, August 2004.

Y.J. Park, D. Richardson, A. Ozol-Godfrey, C.M. Borrer, C.M. Anderson-Cook, and D.C. Montgomery, "Evaluating Experimental Designs for Cuboidal Regions," *Fall Technical Conference*, Roanoke, VA, October 2004.

C. S. Reese V. Johnson, M. Hamada, A. Wilson, "A Hierarchical Model for System Reliability Based on Lifetime Data," *Proceedings of the 2004 Mathematical Methods in Reliability Conference*, Santa Fe, NM, June 2004.

T. E. Sampson, T. L. Burr, D. T. Vo, "Error Analysis of FRAM Gamma Ray Isotopic Analysis Data," *Institute Nuclear Materials Management (INMM) Meeting*, Orlando, FL, July 2004.

L. Tandon, J. Eglin, S. Michalak, R. Picard, D. Temer, D. Jackson, "Plutonium Metal Exchange Program: Current Status and Statistical Analysis," *Proceedings of the 45th Institute of Nuclear Materials Management Meeting*, July 2004.

L.O. Ticknor, K. K. Hill, C. H. Helma, P. J. Jackson, "Analysis of Amplified Fragment Length Polymorphisms Genomic Data for Identification of Clinical and Environmental Isolates. Invited paper: 2004 WNAR/IMS meeting. Albuquerque NM. June 27-30, 2004.

L.O. Ticknor, K. K. Hill, C. H. Helma, P. J. Jackson, "Analysis of AFLP Data for Molecular Identification of *Bacillus sp.* Invited talk: Lawrence Berkeley National Laboratory. Berkeley, CA, September 2004.

J.R. Wendelberger, "Designing an Aging Study," abstract of paper for Invited Session on Case Studies, to be presented at the 2005 Joint Statistical Meetings in Minneapolis, Minnesota, August 7-11, 2005.

J.R. Wendelberger and L.M. Moore, "Experiment Design in the Presence of Restricted Factor Combinations and Resource Constraints," Joint Statistical Meetings, Toronto, Ontario, Canada, August 2004.

J.R. Wendelberger, "Statistical Design and Analysis Techniques for Materials Testing and Development," paper selected for presentation at the Fall Technical Conference, Roanoke, Virginia, October 2004.

J. R. Wendelberger and L. M. Moore, "Experiment Design in the Presence of Restricted Factor Combinations and Resource Constraints," invited presentation, Spring Research Conference, Gaithersburg, Maryland, May 2004.

A. G. Wilson, "Techniques for Test Design in the Context of Staged Acquisition," *NRC Workshop on Spiral Acquisition*, Washington, DC.

A. G. Wilson and K. Sentz, "An Overview of Uncertainty in the V&V Context," *Foundations 2004: A V&V Workshop*, Phoenix, AZ, October 2004.

A.G. Wilson, "Predicting Operational Reliability with Quantified Confidence from Limited System Data. Putting the E in T&E," International Test and Evaluation Association, Baltimore, MD, October 2004.

A. G. Wilson, "Statistics and Big Science," National Youth Science Camp, Bartow, WV, July 2004

A. G. Wilson and N. Hengartner, "Stockpile Reliability Assessment," *ISBA World Meeting*, Vina del Mar, Chile, May 2004.

G. D. Wilson, "The Intersection of the Humanities and Social Sciences with Big Science," Seminar at the New Mexico Institute of Mining and Technology, Humanities Department, November 2004.

G. D. Wilson and C. Herndl, "Fostering Collaboration in Socially Complex Problem Areas: A Rhetorical View," *The 28th Annual Meeting of the Society for the Social Studies of Science*, Paris, France, August 2004.

G. D. Wilson, "The Social Lives of Scientific Facts," National Youth Science Camp, Bartow, WV, July 2004.

C.M. Yeager, C. C. Grow, L. O. Ticknor, R. Cary, J. A. Pannucci, E. P. Williams, T. S. Brettin, C. R. Kuske, "Modulation of *Bacillus anthracis* Transcriptome by Carbon Dioxide, American Society of Microbiology Annual Meeting, New Orleans, LA, May 2004.

3. List of documented classified (LA-CP) and unclassified (LA-UR) internal reports; the most significant publications are denoted by *.

C.M. Anderson-Cook, "Book Review of *Planning, Construction, and Statistical Analysis of Comparative Experiments*," Los Alamos National Laboratory Report LA-UR-04-7884.

C.M. Anderson-Cook, "Book Review of *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*," Los Alamos National Laboratory Report LA-UR-04-7885.

C.M. Anderson-Cook, A. Ozol-Godfrey, R.H. Myers, "Graphical Methods for Design Assessment for Designs Involving Generalized Linear Models," Los Alamos National Laboratory Report LA-UR-04-5155.

C.M. Anderson-Cook, "Book Review of *Statistical Methods for Six Sigma in R&D and Manufacturing*," Los Alamos National Laboratory Report LA-UR-04-5305.

C.M. Anderson-Cook, "Book Review of *Common Errors in Statistics (and How to Avoid Them)*," Los Alamos National Laboratory Report LA-UR-04-5308.

C.M. Anderson-Cook, "Book Review of *System Reliability theory: Models, Statistical Methods, and Applications*," Los Alamos National Laboratory Report LA-UR-04-5309.

C.M. Anderson-Cook, "Book Review of *A Primer on Statistical Distributions*," Los Alamos National Laboratory Report LA-UR-04-5310.

C.M. Anderson-Cook, "Book Review of *Web Development of SAS by Example*," Los Alamos National Laboratory Report LA-UR-04-5933.

C.M. Anderson-Cook, "Beyond Just Sample Size – Issues to Consider when Selecting a Design," Los Alamos National Laboratory Report LA-UR-04-6480.

C.M. Anderson-Cook, L. Liang, T.J. Robinson, "Graphical Design Assessment Tools for Split-Plot Designs," Los Alamos National Laboratory Report LA-UR-04-7083.

C.M. Anderson-Cook, L. Liang, T.J. Robinson, "Graphical Design Assessment Tools for Split-Plot Designs," Los Alamos National Laboratory Report LA-UR-04-5158.

C.M. Anderson-Cook, A. Ozol-Godfrey, "Using Fraction of Design Space Plots for Informative Comparisons Between Designs," Los Alamos National Laboratory Report LA-UR-04-5152.

C.M. Anderson-Cook, A. Patterson, R. Hoerl, "A Structured Problem Solving Course for Graduate Students: Exposing Students to Six Sigma as Part of their University Training," Los Alamos National Laboratory Report LA-UR-04-5306.

C.M. Anderson-Cook, A.G. Wilson, A.C. Koehler, T.L. Graves, C. Chiu, "Integrated Reliability Assessment," Los Alamos National Laboratory Report LA-UR-04-6733.

J.C. Brillman, T.L. Burr, T. B., Forslund, D. W., Joyce, E. L., Picard, R. R., Umland, E., "Modeling Emergency Department Visit Patterns for Infectious Disease Complaints: Results and Application to Disease Surveillance," submitted (2004).

T.L. Burr, "Performance of Variable Selection Methods in Regression using Variations of the Bayesian Information Criterion," LA-UR-04-6324, draft undergoing internal peer review (2004).

T.L. Burr, T. Sampson, C. Vo, "Statistical Evaluation of FRAM Gamma Ray Isotopic Analysis Data," submitted (2004).

T.L. Burr, and G. Tompkins, "Background Suppression Issues," LA-UR-04-5577 (presented at Data Integration Working Group Meeting, Seattle, August 2004).

K. Campbell, L.M. Moore, M.D. McKay and V. Thomas, "Boost Sensitivity Studies (U)," Los Alamos National Laboratory Report LA-CP-04-0272.

K. Campbell, L.M. Moore, M. D. McKay and V. Thomas, "Sensitivity Studies Applied to Boost (U)," Los Alamos National Laboratory Report LA-CP-04-0304.

K. Campbell, "Statistical Model Calibration," Los Alamos National Laboratory Report LA-UR-04-0001.

K. Campbell, "Statistical Calibration of Computer Simulations," Los Alamos National Laboratory Report LA-UR-04-1308.

W. Dworzak, E. Kelly, O. Gillespie, and P. Bielenberg, "Large Scale Stabilization Studies," Los Alamos National Laboratory Report LA-UR-04-3398, May 2004.

H.B. Goldfarb, C.M. Borrer, D.C. Montgomery, C.M. Anderson-Cook, "Using Genetic algorithms to Generate Statistical Designs for Mixture-Process Variable Experiments with Control and Noise Variables," Los Alamos National Laboratory Report LA-UR-04-7485.

T.L. Graves and M.S. Hamada, "Making Inferences with Indirect Measurements," Los Alamos National Laboratory Report LA-UR-03-7367.

T.L. Graves and M.S. Hamada, "Bayesian Methods for Assessing System Reliability: Models and Computation," Los Alamos National Laboratory Report LA-UR-04-6834.

T.L. Graves and M.S. Hamada, "Combining Multi-Level Data to Assess System Reliability and Allocate Resources Optimally: Bayesian Methods and Computation," Los Alamos National Laboratory Report LA-UR-04-7157.

T.L. Graves and M.S. Hamada, J.M. Booker, C. Bowyer, K. Chilcoat, M. Decroix, "Estimating a proportion Using Stratified Data Arising from Both Convenience and Random Samples," Los Alamos National Laboratory Report LA-UR-03-8396, submitted to *Technometrics*.

- T.L. Graves, P.L. Speckman, and D. Sun, "Characterizing and Eradicating Autocorrelation in MCMC Algorithms For Linear Models," Los Alamos National Laboratory Report LA-UR-04-0486.
- M.S. Hamada, H.F. Martz, A.C.Koehler, and E. Berg, "Optimizing the Availability of a Buffered Industrial Manufacturing Process," Los Alamos National Laboratory Report LA-UR-99-5613, submitted to *Reliability Engineering and System Safety*.
- M.S. Hamada, "Using Degradation Data to Assess Reliability," Los Alamos National Laboratory Technical Report LA-UR-03-8337, accepted by *Quality Engineering*.
- M.S. Hamada, H. F. Martz, and S. Steiner, "Accounting for Mixing Errors in Analyzing Mixture Experiments," Los Alamos National Laboratory Technical Report LA-UR-02-5484, accepted by *Journal of Quality Technology*.
- G. M. Hemphill, "Deriving Measurement Uncertainties from the Remeasurement Database," Los Alamos National Laboratory Report LA-UR-04-8630.
- S. Keller-McNulty, G. Duncan, and S. L. Stokes, "Database Security and Confidentiality: Examining Disclosure Risk vs. Data Utility through the R-U Confidentiality Map," *Management Sciences Journal*, under revision (2004).
- S. Keller-McNulty, C. Nakhleh, and N. Singpurwalla, "Masking Data," *International Statistics Reviews*, under revision (2004).
- E. Kelly, J. McClard, L. Peppers, J. Stakebake, T. Venetz, "3013 Surveillance Sampling The Statistical Sample," Los Alamos National Laboratory Report LA-UR-04-6441 (October 2004).
- E. Kelly and D. Olivas, "A Metallurgical Evaluation of W88 Plutonium Fabrication and the Potential Impact on Device Performance (U)," LA-CP-04-
- T. Li, T.L. Burr, and H. Menlove, "Safeguardability of the Advanced Spent Fuel Conditioning Process," LA-UR-04-0514.
- T. Li, M. Miller, H. Menlove, T. Wenz, J. Franco, C. Rael, J. Doak, H. Joseph, K. Thomas, and T.L. Burr, (large funded effort by Burr), "Safeguards Systems Study for the Japanese MOX Fuel Fabrication Plant (JMOX)," Los Alamos National Laboratory Report LA-CP-03-0959 (April 2004).
- L. Liang, L., C.M. Anderson-Cook, T.J. Robinson, "Three-Dimensional Variance Dispersion Graphs for Designs with Split-Plot Structure," Los Alamos National Laboratory Report LA-UR-04-5151.
- L. Liang, C.M. Anderson-Cook, T.J. Robinson, R.H. Myers, "Three-Dimensional Variance Dispersion Graphs and Optimizing Central Composite Design for Split-Plot Designs," Los Alamos National Laboratory Report LA-UR-04-7486.
- L. Liang, C.M. Anderson-Cook, T.J. Robinson, R.H. Myers, "Three-Dimensional Variance Dispersion Graphs for Designs with Split-Plot Structure," Los Alamos National Laboratory Report LA-UR-04-5934.

S. Marron, U. of North Carolina, J. Wendelberger, D-1, and E. Kober, T-14, "Time Series Functional Data Analysis," LA-UR-04-3911, submitted to *Journal of Computational Graphics and Statistics*.

C. McClard, E. Kelly, L. Peppers, J. Stakebake, T. Venetz, "Binning of 3013 Items for Field Surveillance," Los Alamos National Laboratory, LA-UR-04-6144, October 2004.

M.D. McKay and B. J. Williams, "Calibrated Prediction," Los Alamos National Laboratory Report LA-UR-04-4245.

S. E. Michalak, "Estimation of the Expected Weekly Number of Soft Errors in QA or QB," Los Alamos National Laboratory Report LA-UR-04-4697.

S.E. Michalak and R. Gupta, "Crisis Negotiations Game Scenario," Los Alamos National Laboratory Report LA-UR-04-1253.

S. E. Michalak, R. Picard, L. Tandon and J. Eglin, "Statistical Analysis of Plutonium Metal Exchange Data," Los Alamos National Laboratory Report LA-CP-04-0098.

A. Ozol-Godfrey, C.M. Anderson-Cook, E.L. Boone, "Assessing Designs for Mixture Experiments for the Generalized Linear Model Case," Los Alamos National Laboratory Report LA-UR-04-5154.

A. Ozol-Godfrey, C.M. Anderson-Cook, D.C. Montgomery, "Assessing Designs for Mixture Experiments for the Generalized Linear Model Case," Los Alamos National Laboratory Report LA-UR-04-5153.

A. Ozol-Godfrey, C.M. Anderson-Cook, R.H. Myers, "Graphical Methods for Design Assessment for Designs Involving Generalized Linear Models," Los Alamos National Laboratory Report LA-UR-04-5157.

Y.J. Park, D. Richardson, A. Ozol-Godfrey, C.M. Borror, C.M. Anderson-Cook, D.C. Montgomery, "Prediction Variance Properties of Second-Order Response Surface Designs for Cuboidal Regions," Los Alamos National Laboratory Report LA-UR-04-5156.

C.S. Reese, M.S. Hamada, P. Deininger, and R. Krabill, "Exploring the Statistical Advantages of Nondestructive Evaluation over Destructive Testing," Los Alamos National Laboratory Report LA-UR-03-1571, submitted to *Journal of Quality Technology*.

C.S. Reese, M.S. Hamada, and D. Robinson, "Assessing System Reliability by Combining Multilevel Data from Different Test Modalities," Los Alamos National Laboratory Report LA-UR-03-7504, submitted to *Quality Technology and Quantitative Management*.

K.E. Sheldon, C.M. Anderson-Cook, W.F. O'Brien, "Using Computer Modeling to Optimize Cost and Maintain Performance Constraints for Production of Aircraft Turbine Engines," Los Alamos National Laboratory Report LA-UR-04-5307.

G.L. Silver, C.M. Anderson-Cook, "Hydrogen Generation in the Nitric Acid Solution of Plutonium," Los Alamos National Laboratory Report LA-UR-04-7572.

T. Stephens, L.M. Moore, A. Labouriau, W. Hollis, K. Hakonson, J. Schoonover and N. Leyva-Estrada, "S5370 Silicone Foam Aging Studies," Los Alamos National Laboratory Report LA-UR-04-1912.

L. Tandon, J. Eglin, S. Michalak, S., D. Temer, D. Jackson, and R. Picard, "Plutonium Metal Exchange Program: Current Status and Statistical Analysis," Los Alamos National Laboratory Report LA-CP-04-4515 (2004).

J.R. Wendelberger and J. Hockett, "Development of a Test Plan for Repeated Measures Data," Los Alamos National Laboratory Report, LA-UR-04-7039.

A.G. Wilson and K. Sentz, "Belief Functions and Probabilistic Thinking," Los Alamos National Laboratory Report LA-UR-04-7151.

A.G. Wilson, L. McNamara, G. Wilson, "Information Integration for Complex Systems," Los Alamos National Laboratory Report LA-UR-04-6564.

A.G. Wilson, T. L. Graves, N. Hengartner, R. Klamann, A. C. Koehler, G. Anderson, K. Deal, G. Lopez, "Development of an Integrated Stockpile Reliability Model for the TOW Missile," Los Alamos National Laboratory Report LA-CP-04-0844.

A.G. Wilson and A.C. Koehler, "Munitions Stockpile Reliability Assessment," Briefing for Joint DoD/DOE Munitions MOU TCG-XIV Meeting, Los Alamos National Laboratory Report LA-UR-04-8111.

A.G. Wilson, "Information Integration Technology," Briefing for BMDS On-Alert Capability Assessment Team Meeting, Los Alamos National Laboratory Report LA-UR-04-7276.

A.G. Wilson, "Munitions Stockpile Reliability Assessment," Briefing for LANL High Explosives Working Group, Los Alamos National Laboratory Report LA-UR-04-3553.

A.G. Wilson, N. Hengartner, A. Koehler, "Munitions Stockpile Reliability Assessment," Briefing for Joint DoD/DOE Munitions MOU TCG-XIV, Los Alamos National Laboratory Report LA-UR-04-3261.

A.G. Wilson, C.S. Reese, M.S. Hamada, S. Keller-McNulty, "Reliability Overview," Briefing for Surveillance Review Committee, Los Alamos National Laboratory Report LA-CP-04-0437.

A.G. Wilson, S. Keller-McNulty, M.S. Hamada, "Briefing for Enhanced Reliability and Systems Modeling," Enhanced Surveillance Campaign Annual Review, Los Alamos National Laboratory Report LA-UR-04-3268.

4. Membership in Professional Organizations with notations for elected officers (*).

American Anthropological Association

American Association for Rhetoric of Science and Technology

American Association for the Advancement of Science

American Nuclear Society
American Society for Quality (ASQ)
American Sociological Association
*American Statistical Association (ASA)
*Interface Foundation of North America
Institute for Operations Research and the Management Sciences (INFORMS)
*Institute of Mathematical Statistics
Institute of Nuclear Material Management
*International Society for Bayesian Analysis (ISBA)
International Test and Evaluation Association
Mathematical Association of America
Military Operations Research Society
Operations Research Society of America
Phi Kappa Phi
Rhetoric Society of America
Sigma Pi Sigma Physics Honor Society
Society of Environmental Toxicology and Chemistry
Society for the History of Technology
Society for Industrial and Applied Mathematics (SIAM)
Society for Social Studies of Science
The Society for Risk Analysis

5. List of professional society memberships (committees, review panels, etc.) with notations for elected office or honorary positions held.

Calvin Chiu

- C. Anderson-Cook, A. Wilson, A. Koehler, T. Graves, C. Chiu, "Integrated Reliability Assessment. Short Course taught at U. S. Army Aviation and Missile Command, Huntsville, AL, October 2004.

Christine Anderson-Cook

- 2005 Chair-Elect of the ASA Section on Quality and Productivity (elected 2004)
- Associate Reviews Editor for *Journal of the American Statistical Association* and *The American Statistician*
- Reviews for *Journal of Quality Technology* and *The American Statistician*
- Statistics Roundtable Columnist for *Quality Progress*
- Guest Editor for *Quality and Reliability Engineering International* issue on Six Sigma (to appear 2005)
- C. Anderson-Cook, A. Wilson, A. Koehler, T. Graves, C. Chiu, "Integrated Reliability Assessment. Short Course taught at U. S. Army Aviation and Missile Command, Huntsville, AL, October 2004.

Tom Burr

- Reviewer for two books (*Statistics in Medicine* and for *Technometrics*) and several journal articles for *SIM*, *JNMM*, *Technometrics*, *Nuclear Inst. and Methods in Physics Research*

Todd Graves

- C. Anderson-Cook, A. Wilson, A. Koehler, T. Graves, C. Chiu, “Integrated Reliability Assessment. Short Course taught at U. S. Army Aviation and Missile Command, Huntsville, AL, October 2004.

Michael Hamada

- Fellow of the American Statistical Association

Sallie Keller-McNulty

Editorial Service:

- Associate Editor, *Statistical Science*, 2001-present.
- Guest Editor, special issue of *Statistical Science* on Reliability, 2004-2005.

Service to the Profession:

- Elected American Statistical Association President: President Elect 2005, President and Chairman of the ASA Board of Directors 2006, Past President 2007, member of executive committee 2005-2007.
- Chair of National Academy of Sciences panel study on Modeling and Simulation for Defense Transformation, 2004-2006.
- Member of Purdue University Statistics Department External Review Committee, 2004.
- Member of the Harvard University Statistics Department External Review Committee, 2004.
- Chair of the Fourth International Conference on Mathematical Methods in Reliability, 2004.
- Member of National Advisory Committee for Statistics and Applied Mathematical Sciences Institute (SAMSI), 2002-2007
- Member of the NRC/NIST Information Technology Laboratory Review Committee, chair the Statistics Engineering Division sub-committee, 2002-2004.
- Member of the Carnegie Mellon University President’s Advisory Panel for the Department of Statistics, 2002-present.
- Member of the SIAM Science Policy Board, 2003-2006

Service to Los Alamos National Laboratory:

- Member of the Associate Director for Threat Reduction Search Committee, 2004.
- Chair of the Laboratory Directed Research and Development (LDRD) Information Science and Technology Committee and Member of the LDRD Exploratory Research Executive Committee, 2003-present.
- Member of National Security Fellows Committee, 2003-present.
- D-Division POC for Strategic Goal A, Science Based Prediction of Complex Systems, 2004
- Member of the Nuclear Weapons Science Road Mapping Steering Committee and participant on subcommittees, 2004 - present.
- Quantification of Margins and Uncertainty Workshop Organizing Committee and follow-on Program Development, 2004

Elizabeth Kelly

- Associate Editor Chance, American Statistical Association
- National Science Foundation (NSF) Advisory Committee for Environmental Research and Education (AC-ERE) (2000-2004)
- NSF Committee of Visitors (COV) for the Biocomplexity Program (2004)

Andrew Koehler

- C. Anderson-Cook, A. Wilson, A. Koehler, T. Graves, C. Chiu, "Integrated Reliability Assessment. Short Course taught at U. S. Army Aviation and Missile Command, Huntsville, AL, October 2004.

Sarah Michalak

- American Statistical Association
President, Albuquerque Chapter of the American Statistical Association, 10/04 - 9/05
- Organized and chaired an Invited Session on Homeland Security at the Western North American Regional Conference of the International Biometric Society, June 2004

Joanne Wendelberger

- American Statistical Association, Section on Physical & Engineering Science, Chair (2005), Chair-Elect (2004)
- Fall Technical Conference Subcommittee (2004).
- *Technometrics*, Associate Editor (2002-2004).
- Spring Research Conference on Statistics in Industry and Technology, Management Committee, (2003-2004).
- D Division representative to Materials Science and Engineering Council.
- Assisted with organization of "Introduce A Girl To Engineering" workshop for Girl Scouts, March 19, 2004.
- Conducted probability and statistics presentations for 4th grade GATE students at Barranca Mesa Elementary, October, 2004.
- Los Alamos Phi Beta Kappa, Board Member and Scholarship Committee Member, 2004-2005.

Alyson Wilson

- Best Broad Appeal Paper Award for "Quantifying Uncertainty for Complex Engineering Systems," presented at the Third JANNAF Modeling and Simulation Subcommittee Meeting, Colorado Springs, CO, December 2003
- Secretary/Treasurer American Statistical Association Section on Statistics in Defense and National Security
- Co-Chair, Mathematical Methods in Reliability Conference, 2004

- C. Anderson-Cook, A. Wilson, A. Koehler, T. Graves, C. Chiu, "Integrated Reliability Assessment. Short Course taught at U. S. Army Aviation and Missile Command, Huntsville, AL, October 2004.

6. List of Awards, Honors, Elections to national science and engineering societies

Michael Hamada

- The 2004 Council for Chemical Research Collaboration Success Award for PowerFactoRE - A Suite of Reliability Engineering Tools for Optimizing the Manufacturing Process, April 2004

Harry Martz

- The 2004 Council for Chemical Research Collaboration Success Award for PowerFactoRE - A Suite of Reliability Engineering Tools for Optimizing the Manufacturing Process, April 2004

Joanne Wendelberger

- Received 2003 NNSA Defense Programs Award of Excellence for Non-Metal Materials Specification Team Award. Presented 10/19/04.
- Received 2003 NNSA Defense Programs Award of Excellence for Metal Materials Specification Team Award. Presented 10/19/04.

7. Patents

Michael Hamada

- "Optimizing the Availability of a Buffered Industrial Process," Inventors H. F. Martz, M. S. Hamada, A. J. Koehler and E. C. Berg, United States Patent No. 6,782,295 B2, Issued August 24, 2004, The Regents of the University of California, Los Alamos, NM.

Harry Martz

- "Optimizing the Availability of a Buffered Industrial Process," Inventors H. F. Martz, M. S. Hamada, A. J. Koehler and E. C. Berg, United States Patent No. 6,782,295 B2, Issued August 24, 2004, The Regents of the University of California, Los Alamos, NM.